

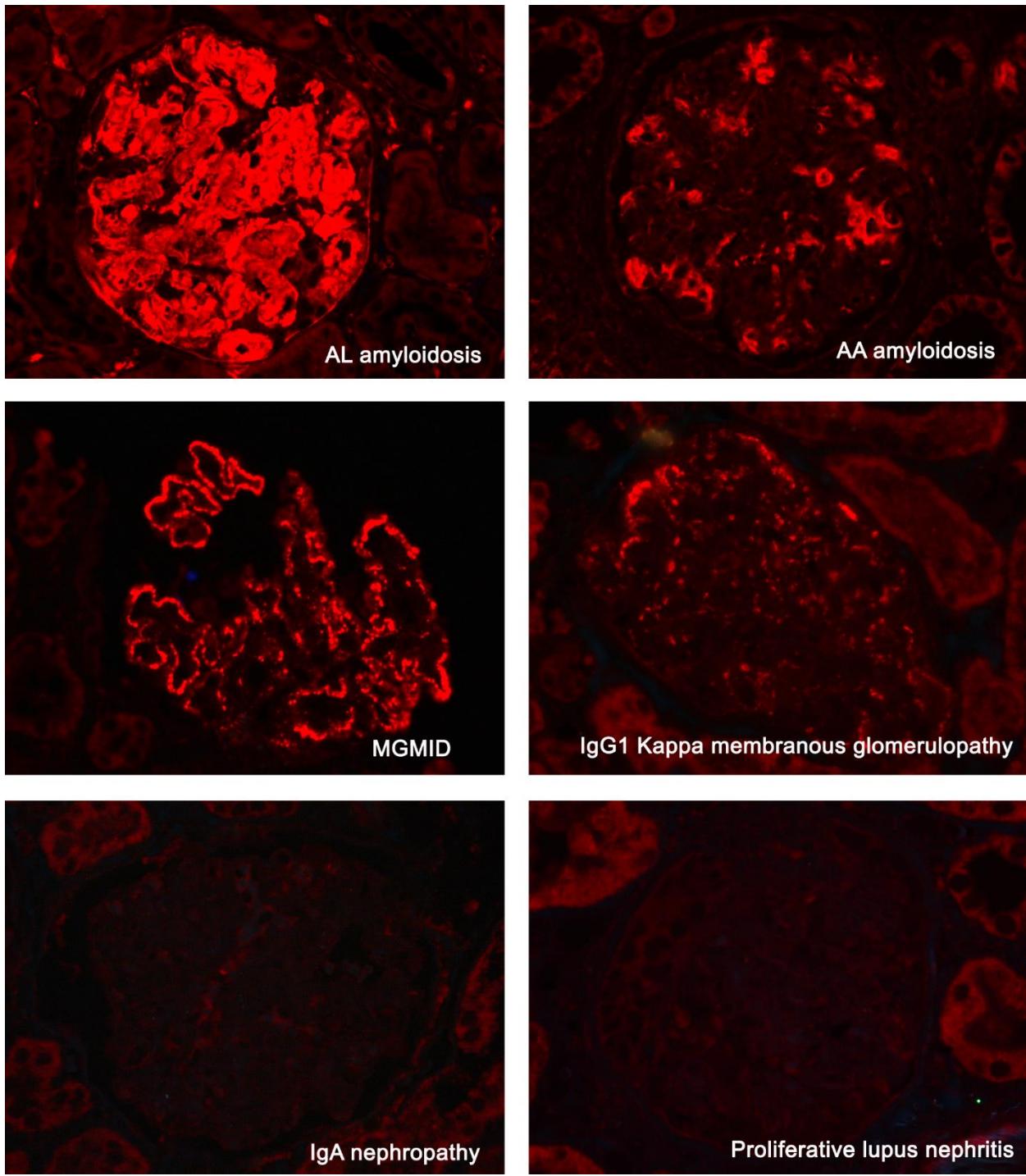
Gene_name	Description	Peptide s	Sequence coverage [%]	# of cases with peptides (%)
IGKC	Immunoglobulin kappa constant	8	86.9	9 (100%)
IGLC3	Immunoglobulin lambda constant 3	7	69.8	9 (100%)
IGHG1	Immunoglobulin heavy constant gamma 1	15	51.2	9 (100%)
IGHG4	Immunoglobulin heavy constant gamma 4	11	46.5	9 (100%)
IGHA1	Immunoglobulin heavy constant alpha 1	10	39.4	8 (89%)
IGHG3	Immunoglobulin heavy constant gamma 3	12	38.5	9 (100%)
IGKV3-20	Immunoglobulin kappa variable 3-20	3	35.3	4 (44%)
IGLL5	Immunoglobulin lambda-like polypeptide 5	7	35	8 (89%)
IGHM	Immunoglobulin heavy constant mu	13	33.6	8 (89%)
IGHV3-23	Immunoglobulin heavy variable 3-23	2	28.2	8 (89%)
JCHAIN	Immunoglobulin J chain	4	25.8	6 (67%)
IGHV4-38-2	Immunoglobulin heavy variable 4-38-2	2	21.4	4 (44%)
IGHV3-15	Immunoglobulin heavy variable 3-15	2	16.8	1 (11%)
IGHA2	Immunoglobulin heavy constant alpha 2	5	14.1	6 (67%)
IGKV1-33	Immunoglobulin kappa variable 1-33	2	13.7	7 (78%)
IGKV2-29	Immunoglobulin kappa variable 2-29	1	10.8	3 (33%)
IGKV2-24	Immunoglobulin kappa variable 2-24	1	10.8	1 (11%)
IGHV3-66	Immunoglobulin heavy variable 3-66	1	9.5	5 (56%)
IGKV1-5	Immunoglobulin kappa variable 1-5	1	9.4	1 (11%)
IGHV3-43D	Immunoglobulin heavy variable 3-43D	1	9.3	4 (44%)
IGSF8	Immunoglobulin superfamily member 8	2	3.9	1 (11%)

Supplementary Table 1. All immunoglobulins identified by mass spectrometry in laser capture microdissected glomeruli from cases of membranous-like glomerulopathy with IgG kappa deposits.

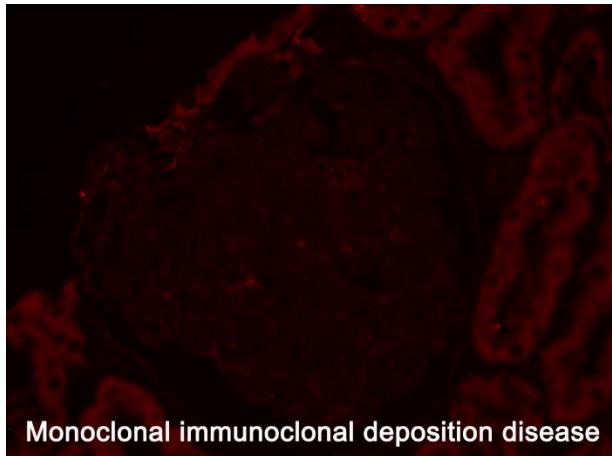
Gene names	APCS	C7	C6	IGKV1-33	HP1BP3	CFHR1	GNG12	C9	VTN	C3	SYNPO2	CLU
MS/MS - THSD7A MG 1	8	1	0	12	1	2	1	2	1	73	3	15
MS/MS - THSD7A MG 2	2	0	0	2	0	2	0	1	0	21	1	6
MS/MS- PLA2R 1	5	1	2	0	0	6	0	7	6	74	1	22
MS/MS- PLA2R 2	10	22	14	2	1	13	2	35	42	205	12	27
MS/MS- PLA2R 3	3	1	2	10	0	7	1	8	19	109	1	22
MS/MS- MLN 1	4	8	6	10	1	4	1	10	22	95	4	24
MS/MS- MLN 2	10	2	2	9	3	4	1	14	37	156	4	20
MS/MS- MLN 3	1	1	0	7	1	3	0	5	8	87	2	16
MS/MS- MGMID1	3	0	0	2	2	2	1	1	5	26	0	11
MS/MS-MGMID 2A	13	5	2	24	1	18	0	7	21	178	3	23
MS/MS- MGMID 2B	13	6	6	28	3	19	1	11	28	227	3	28
MS/MS- MGMID 2C	51	10	5	27	2	39	1	10	24	197	7	34
MS/MS- MGMID 3A	42	22	16	16	1	22	0	36	37	109	1	43
MS/MS- MGMID 3B	33	16	16	23	1	18	1	33	42	142	2	38
MS/MS- MGMID 4A	23	4	5	12	1	23	1	10	20	123	1	32
MS/MS- MGMID 4B	13	0	0	9	0	21	0	3	5	54	1	13
MS/MS- MGMID 5A	15	8	10	16	5	16	2	13	26	180	5	25
MS/MS- MGMID 5B	19	15	10	31	5	10	2	30	42	237	12	24
MS/MS- MGMID 5C	27	8	6	17	1	15	1	17	20	134	4	17
MS/MS- MGMID 6	4	0	0	1	0	3	0	2	0	35	0	6
MS/MS- MGMID 7	38	7	9	18	0	11	1	15	17	110	0	29
MS/MS- MGMID 8	32	40	28	26	2	15	2	39	65	242	3	49
MS/MS- MGMID 9	50	18	23	28	2	18	2	27	40	193	6	49
Total unique peptides	9	23	22	2	7	3	3	18	18	61	10	11
p value	3.5E-04	0.03	0.05	0.006	0.03	0.01	0.06	0.08	0.07	0.06	0.08	0.1

Supplemental table 2. Spectral counts by sample of all proteins that showed  $\geq 1 \log_2$  increased abundance in MGMID samples and a p value  $\leq 0.1$ . Abbreviations: MGMID, membranous-like glomerulopathy with masked IgG kappa deposits; MLN, membranous lupus nephritis; PLA2R MG, PLA2R-type membranous glomerulopathy; THSD7A MG, THSD7A-type membranous glomerulopathy.

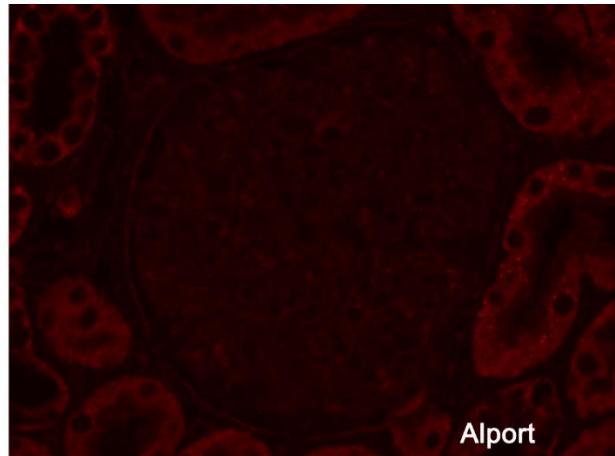
Supplementary figure 1. Representative images of glomerular SAP staining from a variety of renal diseases.



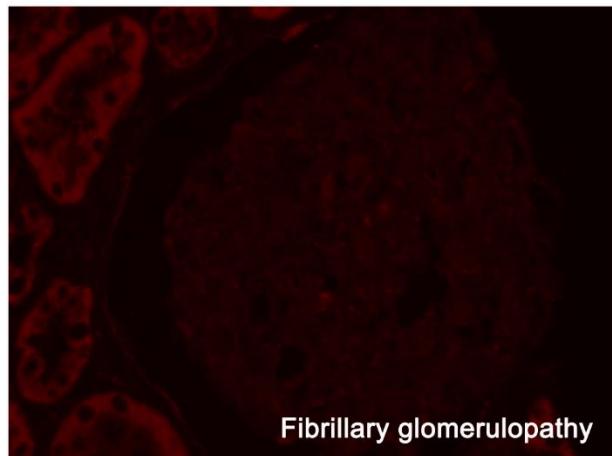
20 um



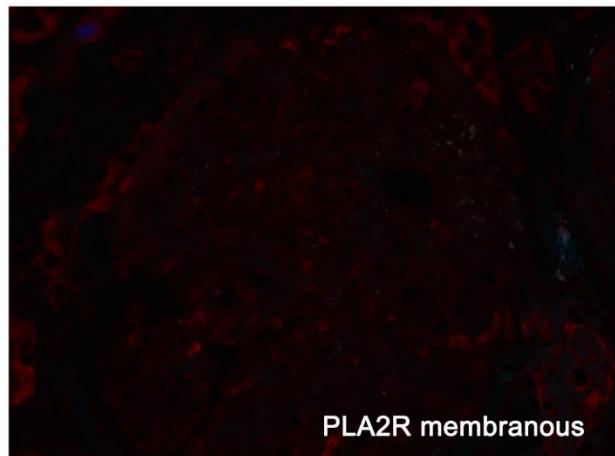
Monoclonal immunoclonal deposition disease



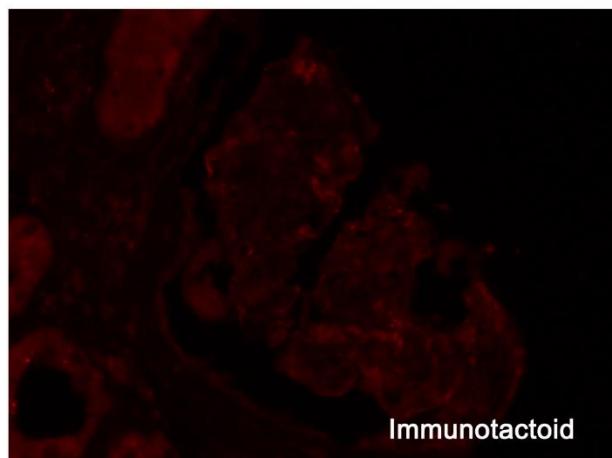
Alport



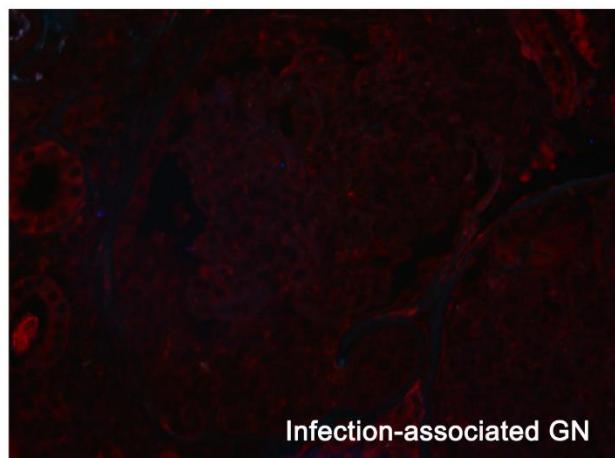
Fibrillary glomerulopathy



PLA2R membranous



Immunotactoid



Infection-associated GN

20  $\mu$ m

Supplementary figure 2. Anti-SAP seroreactivity studies by enzyme-linked immunosorbent assay. Results are shown for each sample. There was no significant difference in seroreactivity between the groups including 6 normal controls, 22 patients with MGMID, and 12 PLA2R-positive membranous glomerulopathy.

